



# Inspector Discussion on Top Ten Probable Violations

Iowa Utilities Board Utilities Regulation Inspectors

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*Iowa Utilities Board*

# **Top 10 Probable Violations written in the last three years**

NOTE: *These numbers may be deceiving.* In many cases there are multiple locations documented for each of these citations during an inspection.

Top Ten PVs	49 C.F.R. Part 192 Violation	Description	Total	2016	2017	2018
				Number of Occurences	Number of Occurences	Number of Occurences
10	192.467(a)	Electrical Isolation	14	7	4	3
9	192.179(c)	Blow-down Valves	14	8	4	2
8	192.357	Meter-set Stress	18	5	6	7
7	192.481(b)	Atmospheric Corrosion Control Monitoring	20	10	5	5
6	192.455(a)	External Corrosion Control	20	7	5	8
5	192.353(a)	Meter & Regulator Protection	32	16	6	10
4	192.355(b)(2)	Reulator Venting	34	11	14	9
3	192.479(a)	Atmospheric Corrosion Control	41	10	14	17
2	192.147(a)	Flanges & Bolts	46	18	12	16
1	192.13(c) & 192.605(a)	Operations & Maintenance, Emergency Procedures	84	58	17	9

# Number 10

## **192.467(a) External corrosion control: Electrical isolation**

- (a) Each buried or submerged pipeline must be electrically isolated from other underground metallic structures, unless the pipeline and the other structures are electrically interconnected (bonded) and cathodically protected as a single unit.

The structure may be owned by the operator or foreign.



# **What we, as inspectors, look for:**

Documentation of the difference in pipe-to-soil readings, as specified in the O&M manual, to demonstrate electrical isolation between the steel piping and any other steel structure or facility.

Or documentation of a negative continuity reading with a flange checking device or volt-meter.

# Custody Isolation Points





# Best Practices - Flange isolation kits







## **Cased Crossings – Steel Pipe**

### **Best Practices – Test Stations**

Test stations with multiple leads to demonstrate proper isolation between pipe and casing. Lead wires should be clearly identified.

# Best Practices

## Underground structures

Steel structures such as vaults or pits must be isolated from the pipeline. Document pipe-to-soil readings from both facilities to demonstrate compliance.



# Number 9

## **192.179(c) – Transmission line (blow-down) valves**

Each section of a transmission line, other than offshore segments, between main line valves must have a blow-down valve with enough capacity to allow the transmission line to be blown down as rapidly as practicable.

Each blowdown discharge must be located so the gas can be blown to the atmosphere without hazard and, if the transmission line is adjacent to an overhead electric line, so that the gas is directed away from the electrical conductors.

# **What we, as inspectors, look for:**

We look for line segments that have blowdown valves.



# Best Practices



# Number 8

## **192.357(a) Meter-set Stresses - Installation**

Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting piping and the meter.

# **What we, as inspectors, look for:**

We check residential and commercial meter sets, looking for any stress points on the connecting piping, at the meter or the riser. Each meter and regulator must be installed to help minimize stress on the piping.

## Pipe stress due to long spans







Meter stress due to  
ground subsidence



# Best Practices

Rebuilt setting

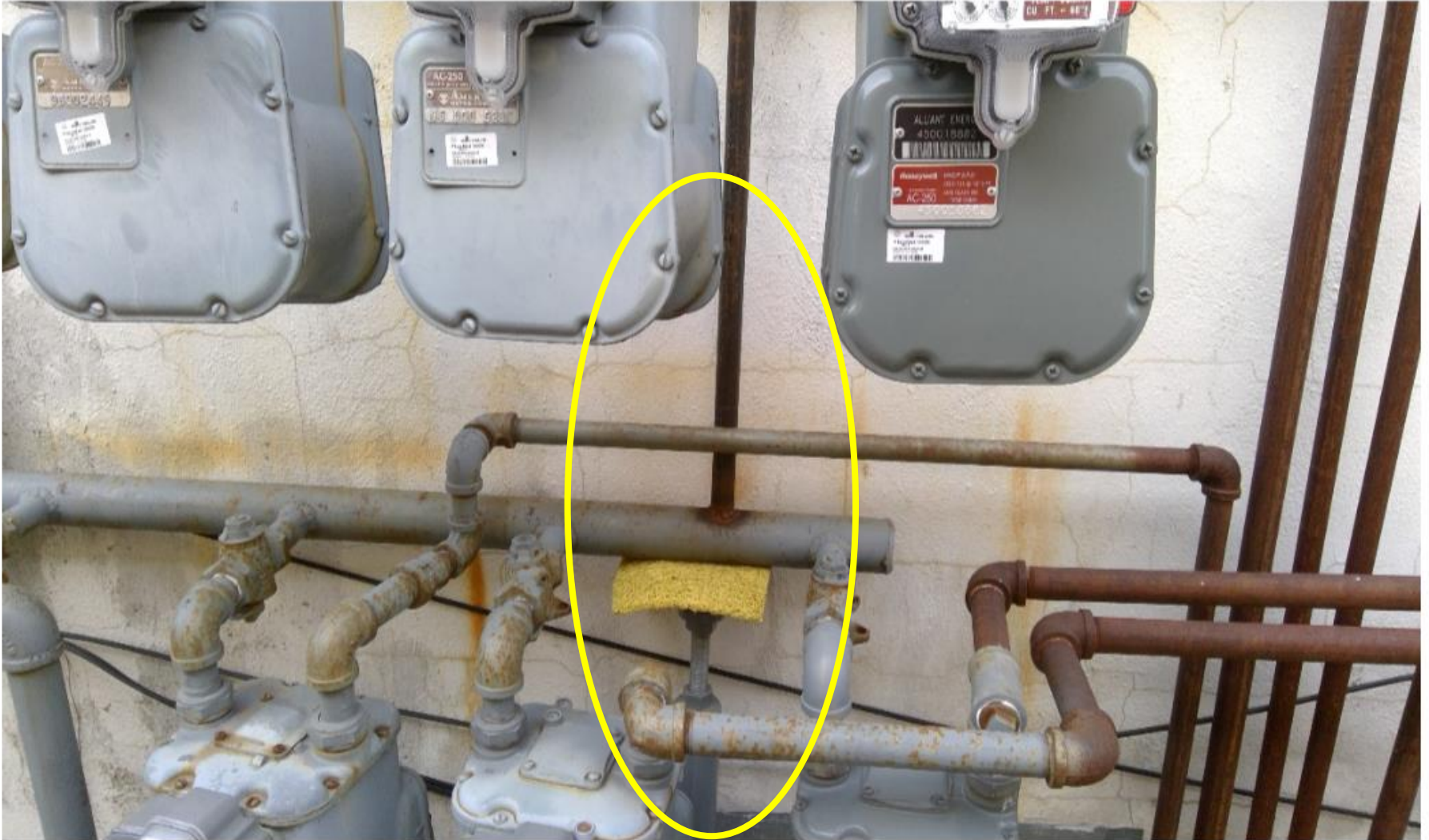


No support on meter manifold outlet





# Best Practices – welded supports



# Best Practices – adjustable supports



# Best Practices – meter stakes







# Best Practices

Building straps and  
anchors

# Number 7

## **192.481(b) – Atmospheric corrosion control: Monitoring**

(b) During inspections the operator must give particular attention to pipe at soil-to-air interfaces, under thermal insulation, under disbonded coatings, at pipe supports, in splash zones, at deck penetrations, and in spans over water.

# **What we, as inspectors, look for:**

If we find dis-bonded pipe support barriers, there should be atmospheric corrosion inspection records for the pipe under these barriers. The same goes for pipe sleeves and under thermal insulation.

We look for places where we are unable to see/inspect the soil-to-air interface, such as: riser sleeves that go all the way up to the service valve, or risers that are buried or encased in concrete/asphalt up to the service valves and under insulation.







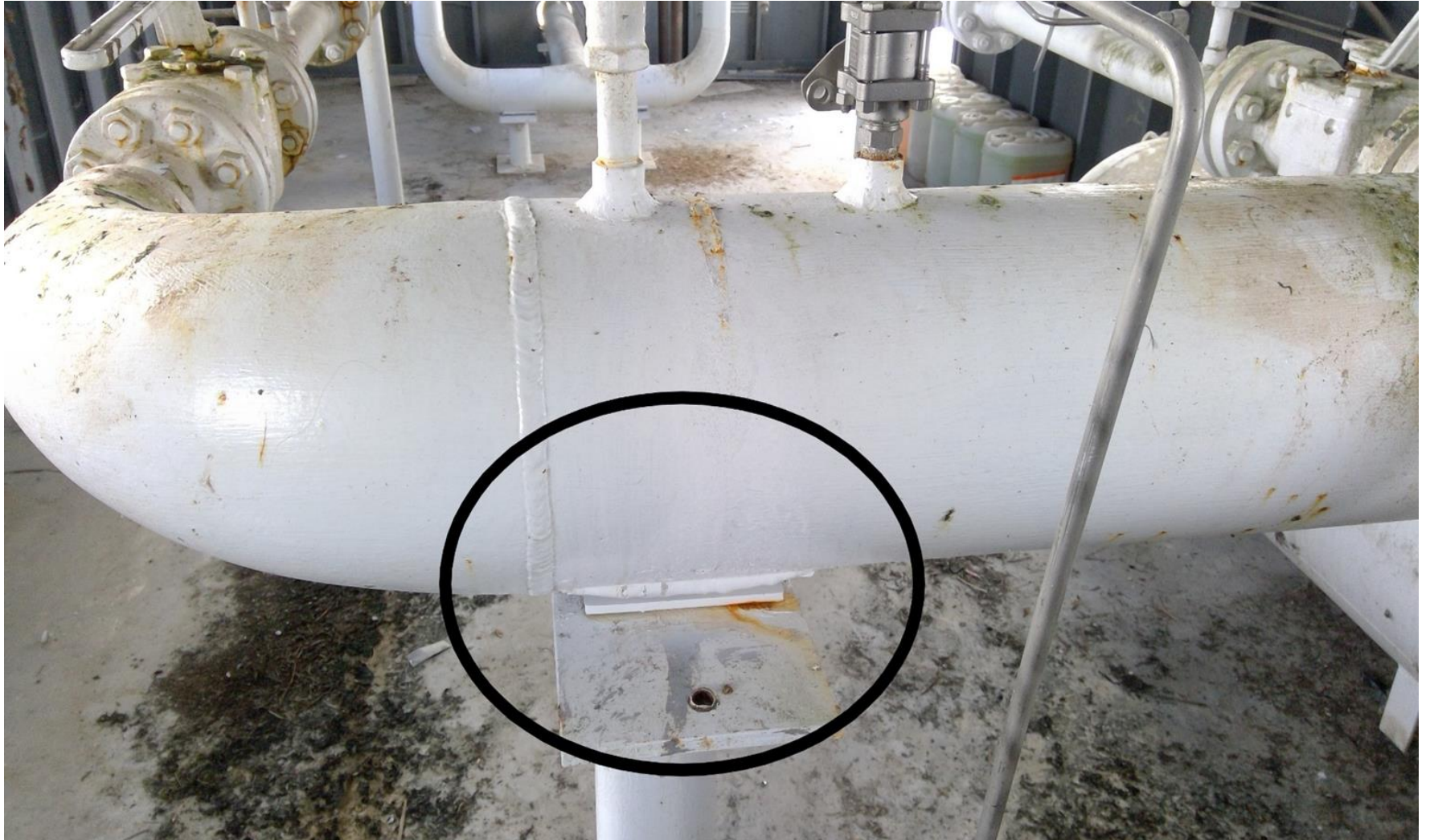








# Best Practices





# Best Practices



# Number 6

## **192.455(a) – External corrosion control**

**Buried or submerged pipelines installed after July 31, 1971.**

(a) Except as provided in paragraphs (b), (c), and (f) of this section, each buried or submerged pipeline installed after July 31, 1971, must be protected against external corrosion, including the following:

(1) It must have an external protective coating meeting the requirements of §192.461.

(2) It must have a cathodic protection system designed to protect the pipeline in accordance with this subpart, installed and placed in operation within 1 year after completion of construction.

# **What we, as inspectors, look for:**

We look for unprotected risers, which are a possible indication of a buried crimp on an anodeless riser.

We look for tracer wire where there is no exposed crimp on an anodeless riser.

We look for new landscaping and vegetation around risers.















# Best Practices



# Best Practices



# Number 5

## **192.353(a) Meters and Regulators: Location & Protection**

Each meter and service regulator, whether inside or outside a building, must be installed in a readily accessible location and be protected from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated. However, the upstream regulator in a series may be buried.



# **What we, as inspectors, look for:**

We look for meters or regulators that are exposed to damage from vehicles, dumpsters, doors, falling ice or any object that could damage them.

Operators will place bollards in front of the exposed meters and regulators or ice guards to protect them from damage.

# Commercial parking areas



# Residential parking areas





# Non-typical Parking Areas



# Dumpsters





# Swinging doors





# Snow and Ice issues



# Best Practices



# Best Practices





# Best Practices



# Number 4

## 192.355(b) Regulator Venting

*Service regulator vents and relief vents.* Service regulator vents and relief vents must terminate outdoors, and the outdoor terminal must:

- (1) Be rain and insect resistant; (pointing sideways or downward, with a screen)
- (2) Be located at a place where gas from the vent can escape freely into the atmosphere and away from any opening into the building; and
- (3) Be protected from damage caused by submergence in areas where flooding may occur. (or under packed snow)

# **What we, as inspectors, look for:**

We look for regulators located near or below any opening into a building, and for regulators positioned under decks or overhangs.

We look for regulators near windows that could be opened; doors, primarily near the latch side; and exhaust vents of any type. We also look for less obvious openings such as air intakes or outlet pipes that may even have been installed after the meter-set assembly.

We look for regulators installed inside a building, an enclosed space, under an outdoor overhang, deck or porch.



Near a window opening



Near a clothes dryer vent







Regulator is positioned near an air intake or exhaust pipe.  
Which one is which?

It does not matter which opening it is.

It does not matter which facility was installed first.





Large vents, small vents, exhaust vents or intake vents are all considered openings. Some are just more obvious than others.

Do all your meter readers and patrol personnel know what to look for and how to respond to a potential issue?



Service regulator vents and relief vents must terminate outdoors.

# Remediation – Vent Extensions

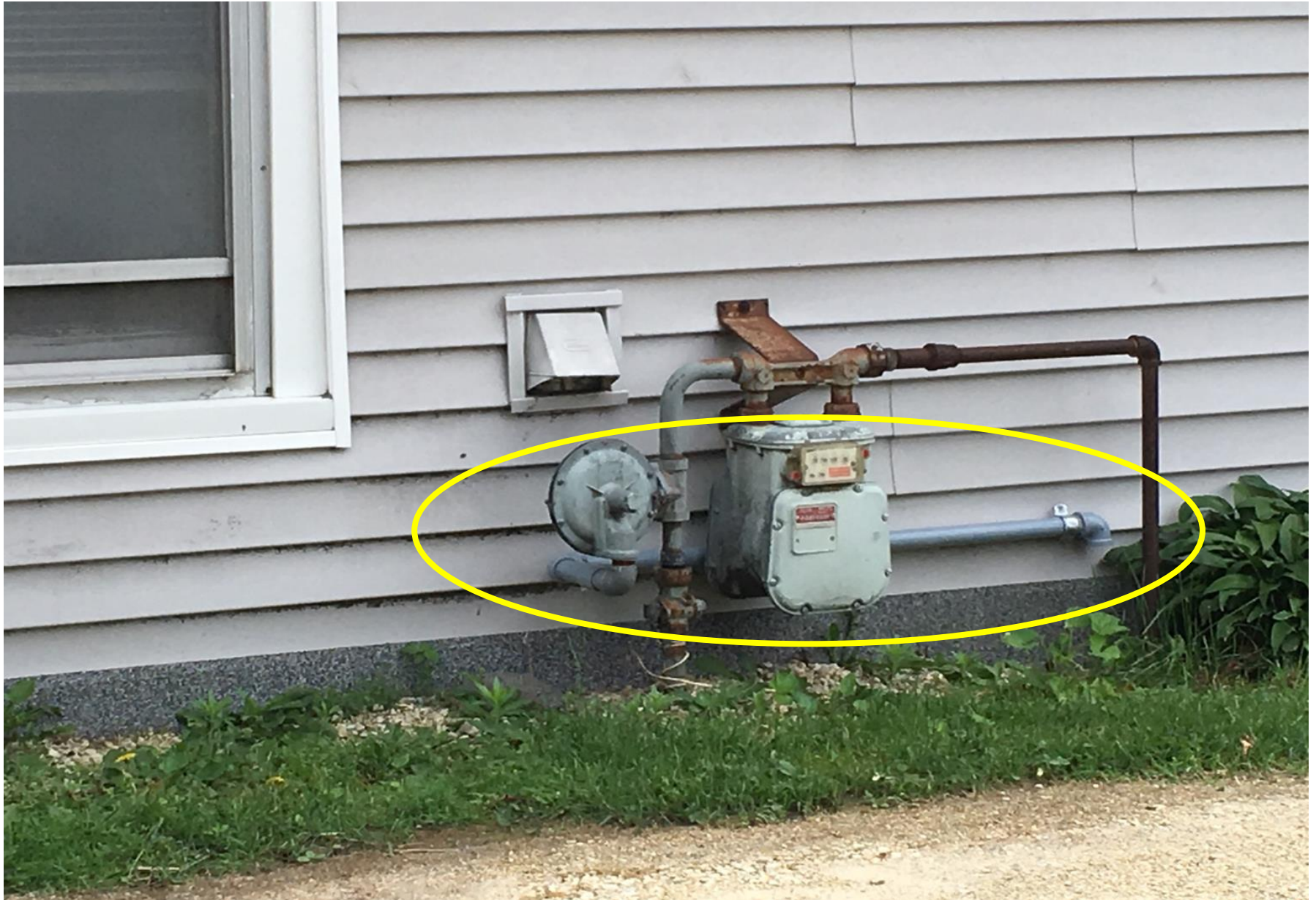
Extended vent piping must be completed with iron pipe or an approved gas carrier pipe, same as normal meter-set piping. Extension piping must be of the same diameter, or larger, of the regulator vent, and should not include overly extended lengths or a large number of fittings that would restrict outlet vent capacity.

The termination should be pointed downward and contain a protective bug screen: 192.355(b)(1). A plastic, thread-in vent terminus is acceptable to terminate a regulator vent extension.

Operators may change out the regulator with an IMN device which contains a slam-shut or internal monitoring valve.



# Best Practices: Extend gas vent away from the opening



# **Best Practices** - Recently installed intake/exhaust vents can sometimes be relocated to a safer location.







## Best Practices

The regulator vent extended to terminate outside.





# Number 3

## **192.479(a) – Atmospheric corrosion control: General**

Each operator must clean and coat each pipeline or portion of pipeline that is exposed to the atmosphere, except pipelines under paragraph (c) of this section.

# **What we, as inspectors, look for:**

Damaged, missing or disbonded pipe wrap on risers (from the soil-to-air interface on up), at building penetrations and under pipe supports.

























# Best Practices





# Best Practices



# Best Practices



# Number 2

## **192.147 Flanges and bolts - (flange accessories)**

(a) Each flange or flange accessory (other than cast iron) must meet the minimum requirements of ASME/ANSI B 16.5 and MSS SP-44.



# What we, as inspectors, look for:

We look to make sure that each nut and bolt are fully engaged with *non-tapered threads*. That is why we look for at least two threads past the nut.







# Best Practices - bolt inspection







Tapered threads that leave a small indentation inside the nut are not considered fully engaged.







# Best Practices – Replacement



# Best Practices





# Best Practices





# Best Practices





# **Number 1**

## **192.605(a) or 192.13(c)**

### **Operations & Maintenance and Emergency Plans**

192.605 (a) - Procedural manual for operations, maintenance, and emergencies.

192.13(c) - Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.

## 192.605(a)

(a) *General.* Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations.

The manual(s) must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least once each calendar year.

Appropriate parts of the manual must be kept at locations where operations and maintenance activities are conducted.



# **What we, as inspectors, look for:**

Strict adherence to the procedures as written in an operator's Operation and Maintenance manual and the Emergency Plan.

Documentation should provide evidence that demonstrates adherence to each procedure.

Any specific code compliance steps or any deviations from a procedure must be documented, the latter with an explanation for the deviation.



## **O&M Issues in the field**

Gas sign posted on the gate contains all the information required by code. Operator's O&M manual states that all signs and markers will include the Iowa One Call or 811 number on it.

## **Remediation**

Operated added a sticker directly to the pipe instructing excavators to call the 811 number prior to digging in this area.

Non-compliant markers and signs should be removed and replaced.



**Best practices — Markers, signs and sticker replacement. Keep operator information up to date.**



# QUESTIONS?

**If you need more information:**

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